

A
Rich Cabinet
OF
Modern Curiosities.

CONTAINING,

1. Many Natural and Artificial Conclusions.
2. Variety of Fire Works, of great Service for the Sea and Land.
3. Divers Experiments in Drawing, Painting, Arithmetick, Geometry, Astronomy, Dialing, and other parts of the Mathematicks.
4. The Art of *Legerdemain*, Sports and Pastimes.
5. To teach Children their A. B. C. in play.
6. An Excellent way to teach one to Read speedily.
7. To catch all sorts of Birds, Fish, and Fowl,
8. A Secret way of Writing Love Letters, &c.
9. Curious Receipts to cast Flowers in Wax, and to make Wax-Work.
10. To preserve all sorts of Fruit a whole Year.
11. To Bake Bread without a hard Crust, and make it whiter, and Keep much longer then usual.
12. To make Curious Glittering Plaisterings, for Cealings, or for Walls.
13. Some Choice Physical Receipts, with the signification of the Colours of Urine, and when Sicknes is at hand.

With a Multitude of other Curiosities, the whole Adorned with above forty Curious Cuts. By *John White*, a lover of Artificial conclusions.

Printed for *G. Conyers*, at the Gold Ring, in
Little Britain.

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GIF OF

DANIEL B. FEARING

30 JUNE 1915

P. & C. 1915



To all Lovers of Ingenious and
Artificial conclusions.

Courteous Readers, I have here O-
pened to your view a Rich Cabinet
of Varieties, both Profitable and
Recreative; and I think I may say the like
was never Extant in the English Tongue.
It may be compared to a Garden, Composed of
sundry Varietys, wherein you may pick and
cull out those Flowers that best please you,
and are fittest for your profit. Therefore
these few Receipts, (whereof divers are my
own,) I Dedicate freely to thy use, not
doubting but that there are things contained
in this small Volumn, that will give satisfac-
tion to the Ingenious, for whose sake I have
Compiled it.

So taking leave, I remain

an Artist's Friend,

John White.

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Books Sold by G. Conyers.

ONE Thousand Notable Things. Teaching to Read, Write, and Indite, Educate Children; Customs of *London* about Apprentices, &c. Of Planting, Grafting, Gardning, Angling, Fowling, Vermin-Killing; Receipt to *make* Old People *look* Young; against Barrenness; to *make* the *Skin* *look* *White*; to get Boys and Girls; to Live a Hundred Years in Health; of Dreams, Riddles, Jest, Stories; Corn to *make* produce a treble Crop; to prevent catching Cold; to *know* if Women are with Child, or not, and prevent the Child being *Marked*; to breed their Teeth with ease; with divers other Notable Things. By the Author of, *The Way to Save Wealth*.

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Price 6 d.

Arts Master Piece in Limning, Painting in Oyl, Gilding Wood, Leather and Mettals, Japaning, to *make* Varnish, Artificial Tortoise-shell, Dye Bone, Horn, Bristles, Feathers, Wyre; to *make* Glass, Enamel, to paint Glass-Globes, to gild Mettals, & cast Figures in Wax, &c. pr. 1s.

The way to get VVealth by 23 sorts of VVine equal to French, Cyder equal to Canary, Mead, Mum, Coffee, Tea, Chocolate, Cordial Water. To make 40 sorts of Ale, to remember all you Read, Accounts cast up, to *keep* Account Books, Rates of Carts, Coaches and Watermen, write Letters, compound and recover Debts, Letters of License, and divers Matters fit for Traders to *know*, to *make* a Strop for Razors, a Garment that will *keep* out Rain, Affize of Bread, time of Sun rise and set. *Esop's Fables*.

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To

A rich Cabinet with variety of Inventions.

*1st. To make a glorious light with a Candle, like
the Sun-shine.*

THIS is a rare Conceit, and fit for those Artists, or others that perform curious and fine works by Candle-light, as Jewellers, Ingravers, or the like, or those which are weak-lighted to read by, never dazeling the Eye.

Go to the Glas-house, or Glas-shop, and let them blow you a thin round Globe-glass, bigger than a penny Loaf, (the bigger the better) with a short neck like a Bottle, they know how to make them. When you have this Glass, with Glew, or Wax bind a piece of Tape or Packthread about the neck or top, making a little loop therewith to hang by; then fill your Glass with the purest Conduit or Spring-water you can get (putting some Aqua-vita therein to keep it from freezing) stopping it close, to keep the dust out; having thus done, if you will use it at a Table or Bench, knock a Tenterhook or Nail into the Ceiling or Shelf, and with a Tape or Pack-thread fasten it to the loop, and hang it up; (but a round stick were better to hang it on, putting it into a post or hole in the wall, that you may let it higher or lower at your pleasure in turning the stick: then behind your Glass set a Candle lighted upon the Table, and you shall have a glorious light through the Glass and Water for your purpose; behold the figure following.

Some

A rich Cabinet,



Some use to place a sheet of oyled Paper betwixt them and a Candle, and this will cause a good light.

2d. To cleave a Groat, or other piece of Silver, like two Groats.

THis to many will seem impossible, yet may thus be done. Take three small Pins, and prick them down upon a board, or table triangular-wise, and then take a thin whole Groat, and lay it level on the heads of the three Pins, as you see in this same Figure; having thus done, take a



piece of Brimstone and bruise or beat it to Powder, covering the Groat therewith all over, in a pritty thickness, and then with a lighted piece of Paper, or a candle, set the Brimstone on fire until it be consumed; when this is done, and the fire out, you shall see the edges to open a little like a dry Oyster, then take a Knife and put into it, and it will

easily cleave in funder; having the impression on both sides very perfect.

3d. To lay one end of a Staff or Stick upon a Stool or Table and so hang a Pail full of Water at the other end, having nothing to hold on the Stick, nor nothing under the Pail.

TO perform this Conceit, do thus, lay one end of a Staff or Stick a pritty way upon a Table or Stool (so

that it roul not off) letting the other end hang over the Table likewise, (as you may see in this Figure here expressed) then take a Pail full of Water, and hang the Pail or handle upon the same; but you must have another short stick that will reach just from the inside of the bottom of the Pail, to the long Stick on the Table, placing the short Stick just under the Pail very stiff



and then shall the Pail of Water hang from the ground upon the long Staves end on the Table without falling. Seeming very strange, but this is somewhat difficult at first, till you hit just in the center of gravity: yet I have often done it.

4. *How to make dainty sport with a Cat.*

If you will have some sport with a Cat, then get a little Bell, such as the tame Hawks have at their legs, and tye the Bell something hard at the end of the Cats Tayl and let her go, she feeling of her Tayl smart, and hearing of the Bell gingle, she will run up and down as if she were mad, flying against the Walls and Windows: then if she can, she will get into some hole to hide herself, but when she wags her Tayl never so little, then out she comes, and is as mad as before, and never will rest in quiet till it be taken off, or she can get it off herself.

Another.

Some have shod a Cat round, with putting melted Pitch into four Walnut-shells, and placing her feet therein, and she will make pretty sport.

Another.

I was told of a merry fellow that came into an Ale-house in cold weather, and finding but an Ordinary Fire, said, He would make the Cat piss it out, and watching his opportunity, he getteth his Hostesses Cat, putting her head

betwixt his thighs, and holding her four Feet fast in one hand, and with the other hand held up her tayl near the fire, and did piss such abundance that she quite quenched the same.

5. *How to make very pretty sport with Ducks, or Poultry.*

ONE Summers day my self and two or three Friends walked into the Fields for our recreation, and being dry and hungry, we went to a Victualling-house in a Country Village, where we could get nothing to eat but Bread and Cheese, and sitting in an Arbour, the Womans Ducks being near us, we flung them our Parings of Cheese, the Ducks were very greedy of the same, (then quoth one of the Company) I will shew you some sport.

Presently he getteth about a yard of strong thred, and finding a little rag of red cloath, tyeth it to one end of the thred, and at the other end tyeth a piece of Cheese (somewhat lesser than a Bean) with part of the rind on: and throweth it amongst the parings to the Fowle, presently one of them swalloweth it down, now the rest of the threed and the Rag dragged behind her, and she wading up and down, perceived the red Rag to follow her, of which she was sore afraid, then she did run from place to place, not knowing what to do, at length she took wing and flew into a Pond of Water, and there she quackt, but presently she spy'd the Rag to swim after her, then down she dived, then up again, then down, then up, at length out of the Pond again in her former posture, at which the Woman was amazed and thought her Duck was bewitched. But at the length the threed was tangled at some bush or other, and so broke, or pulled the Cheese out of her Belly, and then she was quiet.

The like sport you may have with other Poultry, by tying a long white Goose-quil, (or a light stick with a rag on the top) upright at her tayl.

Richard Thorne List Booke 6 To

6. To know the hour of the day or night at any time, by a Ring and a Glass, being a dainty Clock.

TAKE a small thred, and put it through a Gold Ring, or other like Ring, and doubling the thred, tye a pretty big knot at the end, and cut it off, and let the doubled Threed be seven or eight inches long, then take a Bole glass, and set it on a Table, and hold the knot of the threed something hard betwixt the ends of your forefinger



and your thumb, as you see here in the Figure, which will cause the Pulses of your wrist to beat; let the Ring hang in the middle of the Glass a little within the Rim, then the working of your pulse will make the ring to move striking upon the sides of the Glass the hour of the day or night, and then the Ring will stand still again.

7. To know the hour of the Day or Night at any time.

IF any two (or more) Parties be in Company together, let one of them take something from the ground, (what they please) and give it to another Party standing by.

Now, if the thing taken up hath grown, and may grow again, as Seeds, Herbs, or the like, it is then 1. 4. 7. or 10. of the Clock, or very near.

If it did never grow, nor never shall, as Stones, Metals, Pot-sherds, Glass or the like, it is then 2. 5. 8. or 11. of the Clock, or very near.

But if it hath grown, and will never grow again, as Sticks, Chips,

Chips, Shells, or such like, it is then 3. 6. 9. or 12. of the Clock, or very near.

But Remember this Caution.

That both they that give the Judgment, and they that take up the thing, do not know what hour it is before they try the Conceit.

8. *To make two Knives hang upon the brim of a Glass without falling.*

TAKE a little stick, some four inches long, and make it sharp at one end like a Butchers Scuer, and then get two Knives, somewhat of an equal poise, and prick the points of them towards the bigger end of the stick on each side slope-wise



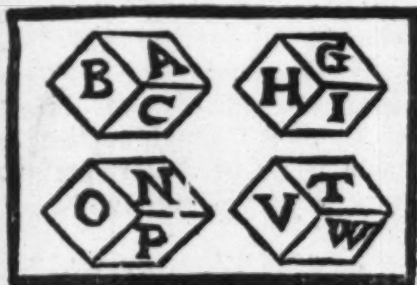
as you may see here in the figure; then put the small end of the stick upon the Rim of a Glass of Wine or Beer, and you may take up the Glass and drink, and they will not fall off.

9. *To put a Finger, or wash hands in melted Lead without danger.*

TAKE an ounce of Quick-silver, two ounces of good bole-armoniack, half an ounce of Camphire, and two ounces of Aqua-vitæ, then mingle them together, and put them into a brazen Morter, and beat them with a Pestle: having thus done, anoint your hands all over thoroughly well with this Oyntment, and then you may put your finger into melted Lead, or you may wash your hands therewith, if one pour the Lead upon them, and it will neither scald nor burn you.

10. *A very pretty and ready way to teach Children or others, suddenly to learn their A B C in manner of Play.*

Cause four pieces of Bone or Wood to be cut into six square like Dice, and upon every side or square let one of the Letters of the Alphabet be ingraven or writ; as A. B. C. D. E. F. upon one of them, then G. H. I. K. L. M. on the other, and so of the rest in order, as you may see here in the Figure.



Now the Child taking delight, and using to play with them (amongst other Children) and being told what Letters are uppermost, will soon learn their Alphabet, as it were by the way of sport and Pastime.

11. *An Excellent way to teach one to Read speedily and truly:*

LET a Scholar or one that can read well, take any Book of small value, and at every Syllables end underneath or at the top, with a small Pen of Ink, let them make a little speck or mark: but if the speck or mark were made with red Ink it were the better; Or if it be in a Book that you would not deface then take a small Pin or Needle, & prick little holes at each Syllable, which will hardly be perceived. This experiment is best to be made with hard words of many Syllables, as in the example following.

Abraham, Achitophel, Bartholomew,

Christopher, Demetrius, Anabaptist,

Mathematician, Nebuchadnezzar, Quo-

tidian, Patrimony, &c.

These to the ingenious will suffice, for I have known

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those

those which by no means could be brought to read, yet in a short time by this method they have learned to Read perfectly.

12. *Divers rare motions, performed by the Load-stone.*

MAny and wonderful *Mathematical* conclusions are performed by the *Magnet*, or *Load-stone*, only I will give a touch at some few for recreation.

These stones are to be had at the Ironmongers, but they ought to be polished and made fit by a cunning Artist; This stone hath his two Poles, one North, the other South, answerable to the Poles of the World; for if you take a piece of Wyre of 4 or 5 Inches long, and touch one end thereof with a *Load-stone*, and then thrust it through a piece of Cork, putting it to swim in a *Bason of Water*, presently you shall see one end of the Wyre will turn full North, and the other full South.

This Receipt is profitable for some Travellers, who having a Sewing-needle about them that is touched with this stone, may prick it into some little light piece of Wood or Cork, and place it in the Water, and it will set out the North and South instead of a Compass.

If for recreation you take two wyres, and put each wyre into a cork, touch one wyres end with the *North* end of the stone, and the other wyres with the *South* end of the stone, and then put them both into a *Bason of water* a pritty way asunder, yet they will begin to move and stir, and draw nearer together, and on the sudden joyn and meet: Now if upon those Wyres or Corks there were placed little paper Tilters on Horse-back, they would run their course at one another in the water very prettily.

Also, if this stone or *Magnet*, be inclosed in a Box of Wood, Stone, Silver or Brass yet it will extend its operation and working by many pretty and ingenious practices admirable to behold.

As for Example, if you will make the forms & portraictures of divers things in thin Past-board, as Horse-men, foot-men, Ships, Boats, Beasts, Birds, Flyes, Worms, Serpents, or the like you may closely convey into them a short piece

of Wyre, and set them upon a Board, Trencher, or Past-board, and if you will have them move or walk, then hold the *Lead-stone* close in your hand under the Board, and that way which you move your hand underneath, that way the Images will move and creep on the top.

Also, if you place the *Lead-stone* privately to, or near the Seeling, or over a door, and then hold a piece of Iron near to it (tying a thred to the Iron) that it touch not the stone, which will attract it, and then the Iron will seem to hang in the Air; If you touch an Iron Ring with this stone, it will take up a dozen or more Rings together, hanging one to the other like a Chain. Also if a Knives point be touched therewith, it will take up Needles or Wire, and by it you may know the counterfeit, or Newgate half-penny, as some call them.

Many other rare conclusions may be performed by this stone, which I forbear to write of; Fire, Garlick, or Onions, spoileth the vertue of this stone; therefore let it not touch or come near them.

13. To catch Kites, Crows, Magpies, &c. alive.

GO to the Apothecaries, and bestow two pence in *Nuxvomica*, then beat it to powder, or slice it as you do Ginger; this being done, take raw flesh or liver, and cut it into little pieces or gobbets, that the Fowl may swallow them whole, then cut holes in the same, and put your powder or slices therein, and then lay these pieces where they hunt but as soon as they have swallow'd down the same, they will fle to the next high Tree they can come at, & this presently makes them so drunk, or sick, that they straight will fall down from the top of the Tree, to the ground, that you may take them up alive with your hand: But you must be sure to watch them, and run presently to the Tree, for they will soon recover and fle away.

I believe if it were sodden with other Grain, it would have the like operation with other Fowl.

14. A way to catch Pidgeons, or other Fowl.

TAKE pieces of brown Paper, & roul them round, making Coffins of them, such as the Grocers make to put their Fruit in; let them not be above a finger long, paste the sides and ends of them with some starch, clip the upper part of them round with a pair of Sheers, then anoint the inside of the uppermost skirts of them round about with Birdlime, or some stuff that will but cling to the Feathers: But you must (a day or two before you use it,) lay or strew some Pease or other Grain to make them haunt the place, and they will be the less fearful; then if you please, make a hole in the ground a little way, & put your Coffins upright or sloping therein a few peason or Corn in them, strewing here and there Peason near them, and when she picketh into the Coffin, she is immediately hooked, and blindfolded, not seeing which way to flye; and thus you may take them easily.

15. A sure way to catch a Pick-Pocket.

AS I was writing the former Receipt, It put me In mind of a pretty conceit that a friend once related to me, which was thus: A Gentleman being in a throng in a Fair, had his Purse pickt out of his Pocket, he missing it, was somewhat vext, but could not mend it; but studied how (if he could) to be revenged: presently he buyeth two penny-worth of fish-hooks, & causeth a Taylor to sew them round about toward the upper part of his Pockets, with the points of them down-wards, and so the next day away he goes to the Fair again amongst the throng, throwing his Cloak on one shoulder, seeming careless of his Pockets, wherein he had store of money: Presently there was a Diver nibling at the Bait, and nimbly had his hand in his Pocket: The Gentleman being wary (perceived that the Fish had swallowed the hook) gives a jerk aside which caused the hooks to catch good hold in his hand, and then he had him sure: Then said the Gentleman, Fellow what maketh thy hand in my Pocket? O good Sir, (replyed the pick-pocket) pardon me, I cannot pull it out? Come (saith

(saith the Gentleman softly to him, because no body should take notice) go along with me: So cheek by joll they walked together, with his hand fast in the pocket (but covered with his Cloak) and to the Tavern lovingly they go together, where the Gentleman told him of the loss he had sustained the day before, and making of him to restore back his money, he cut out his pocket, and let him go. Surely this pick-pocket had good store of picking work to get the hooks out of his hands again.

16. To make Fowles and all small Birds Drunk.

YOU must observe what meat they love or use to eat, as Wheat, Barly, or other Grain, and lay the same to steep in the Lees of Wine, or in *Aqua-vita*, or in the juyce of Hemlock, and strew the same Grain in the places where the Birds do haunt.

Another.

Take Tormentil and boyl it with strong Wine, Wheat, Barly or other Grain, then strew this in those places where you intend to take them, or where they use to haunt, and the Birds will eat the pieces among the grain, which will make them so drunk that they cannot flye away.

Another

Make Past with Barley, meal, Onion blades. & Henbane seeds, and put or throw it where the Birds do haunt.

These experiments are best to be done in winter in a deep Snow.

To make sport with a Cock

Hold a Looking-glass before him, and he'll Fight as eagerly with his shadow as if it were a live Cock.

17. To catch Fish in a dark night, with a Candle under Water.

GET a Urinal, and put pretty soft Clay therein, & with something that is flat at the end, press the clay gently to the bottom of the glass, smoothing it as well as you can, then take a stick, and shape it about the bigness of a Candles end, wet the stick, and put it into the neck of the glass, making a hole in the middle of the clay, as you make clay candle-sticks; then make a little hoop of a Willow stick, and

and tie pieces of cork in four places of the hoop equally distant, and get a thin light round piece of board, and with four little stiks of an equal length, tie one end of them to the Corks, and the other ends fasten to the board to support it, as you may see here in this Figure:



In the board you must make a hole in the middle to put the neck of the glass through, and there tie it and make a loop with a string to the board that you may with a long pole put it into the water: when you will use it, put your candle into the glass in the clay socket, a little below the brim, that the wind blow not the light out; if you please you may with wax or glew put little pieces of looking glasses, or other glass under the board,

on the side next the water, and this light will shine a great compass in the Water, and the Fish will straight resort to the same, where you may very easily take them with a Net.

This might be done with the Glass alone, by tying Corks about the neck of the Glass, to keep the mouth above water.

18. *An excellent Bait to catch Fish with an Angle.*

Make Paste with fine Wheat-flower, tempered with a little Saffron and Sugar, and bait your hook therewith, and they will bite apace; This is a good bait for Roch, Dace, and sic's like.

Another

Take the crum of a new penny white-loaf, and an ounce of

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of *Coculus India*, and an ounce of Henbane seed finely powdered, temper the same well with good *Aqua vita* into a Past, and divide them into small pieces bigger than grains of wheat, and then cast handfuls in at once into the water where is store of Fish, and you shall presently see the operation of the same.

19. To make one watching Candle out-last three.

Take a Pail, or Bucket, and fill it full of water, and set it in the place where you intend that your light shall stand: then take your Candle and warm it at the lower end, and there stick a brass farthing token, or such like; and when you will light your Candle, put it gently down into the middle of the water, (but be sure that the bottom of the Candle do not touch the bottom of the Pail) and then it will swim upright to the very edge near the light? The reason that the Candle will last so long is caused by the coldness of the Water; and this is a safe way that no Rat can run away with the Candle lighted, as I have heard that they have done; by endangering the house with fire.

20. To write any name or mark upon a Paper, and then burn it to ashes, yet afterward it may be read plainly.

Take a new clean Pen that was never written withal, and dip in your own water as you do in Ink, then strip up your Shirt-sleeve above your wrist, and upon your arm write your name, or any name, or any mark, and then let it dry on your skin, and nothing will be seen, then put down your sleeve and button your wrist; (Do this privately, and it will cause some to wonder:) then take a piece of white paper, and write your name or the mark thereon with another Pen of black Ink, (but let it be written as like the other as you can) then take the Paper and burn it, and lay the ashes on a Table, and stripping up your sleeve, rub the ashes hard with your finger, where you had written with your water, then blow off the ashes, and the name or mark will plainly be read on your arm in black Letters.

21. *To view the back part of your Head by Glasses.*

IF you would behold the back part or shadow of your head for a wound, or the like) take a looking-glass and hold it behind your head, and then take another looking-glass and hold it before you, and from the Glass behind you may see your shadow in the Glass before you.

22. *To name all the spots or court Cards in the Pack, and never see them.*

YOU must privately drop a drop of water or drink (about the bigness of two-pence) on a table before you where you sit, and let any body shuffle the Pack of Cards, and then taking them into your hand, place a candle on the table before you (for this trick is best to be done by candle-light) and holding down your head (as you may see in the Figure) lift the Cards above the brim of your hat, close to your head, that the light of the candle may shine on the Cards, then in the drop of water (like a looking-glass,) you shall see every speck of each Card before you



draw them, which you may name; or putting your finger upon the spots, you may say that you feel them out; then lay down your first Card, and name the next, as your first Card was the Deuce of Clubs, the next is the five of Spades, and so of the rest.

23. *To keep any Fowl, Venison, or other pieces of Flesh, sweet for a Month together, although the weather be never so hot.*

Make a strong Brine with Bay Salt and white mingled together, so as the water be over glutted with salt, and being scalding hot, parboyl therein the Fowl, or Flesh which you intend to keep for some reasonable time, (that is to say, according to the greatness and greasiness thereof) then hang it up in a convenient cool place, and it will last a sufficient time, without any bad or over-saltish taste.

This is a good way for Sea-men, and others in hot countries who are enforced sometimes to victual themselves in such intemperate climits where no flesh will last sweet four and twenty hours together, by reason that they have no means to make the same to take salt, which without question will enter this way, and make penetration very speedily. by reason of the hot and fiery spirit of salt thus prepared.

24. *A Drink that Travellers may brew for themselves, when they cannot relish their Beer or Ale.*

Take a quart of good water, put therein five or six Spoonfuls of good *Aqua-vita*, and an ounce of sugar, with a branch of Rosemary, brew them a pretty while out of one pot into another, and then is your Drink prepared.

25. *To make on the sudd n, good Drink for Marriners, or for poor People, when Beer and Malt is dear.*

In time of extremity, these things following will seive to suffice Nature (as hath been often proved,) put a good quantity of wholsom fair water, a small portion or few drops of the Oyl of Sulpher, incorporating them well together and it is ready.

Another.

One drop or two of the Oyl of Vitriol added to a good quantity of fair water, and well stirred together, performeth the like.

Some mingle Vin:gar with cool water and it serveth very well to quench the thirst.

Others will carry a piece of Alom in their pocket if they are to travel, and know not how to get drink or water, and when they are a dry, they put a piece of that in their mouth, and it will fetch up moisture which will assuage the thirst.

Or take a spoonful of Oatmeal and brew or mix it well together and drink it.

26. A profitable way to harden Leather, that it shall out-last other Leather a long time.

THis is a good and profitable Receipt for many poor labouring men, and is thus performed; Take & lay such Leather as is well tanned to soak in water, wherein there hath been some store of filings of Iron, a long time, or else in the water that hath long lain under a Grinding-stone, into which such Iron as hath been from time to time ground away, hath there settled.

This is good also to harden Leather for the Caulkers or Pumps of Ships, or others, to make them last long.

27. To make a dainty streight Walking-staff to have knots where you please.

GET a straight piece of Wood (of your desired length) of Holly, Ash, Service-tree, Walnut-tree or Pear-tree, let it be free from knots, or shakes, then plain it into six or eight sides, a good deal bigger than your Staff shall be; this being done, get a short punch of Iron, and let the small end be filed about the bigness that you intend your knots shall be, filed about a bench or table, and where you will make the knobs with a hammer punch holes therein, & so do on every side, then plain it over again till you have made your staff smooth, that there be no dents seen thereon; when you have thus done, put it into some cauldron of boiling water for a good space, and when you take it out again, you shall see that it will be full of knobs, for with the heat of the water it forceth the bruises (which were made with the Punch) to swell out of the wood again.

You may file your punch like a star, or other work, and it will shew very pretty; I once saw a Partizan, or Captain's Leading staff, which was done in this manner, and being

being put into a Dyers Cauldron when he dyeth blacks, when it was dryed, and rubbed well with Linseed Oyl, it shewed like Ebony.

28. *To know when the Moon is just at the Full, by a Glass of Water.*

TAKE an ordinary drinking glass, and fill it full of Water up to the brim, so that it dorth not run over, let this be done a little before that the Moon be at full, and then at the very Instant that the Moon is at the full, the water will presently boyl over.

29. *To know the Moons age at her Increase.*

IHAVE been told, that a thin piece of Cypress, such as they had wont to make har-bands of if you hold it before your eyes in an evening at the increase of the Moon, you shall know how many days old she is; As when she is one day old, you shall see but one Moon, at two days old two Moons, at three days old three Moons; but afterward you shall see but one again.

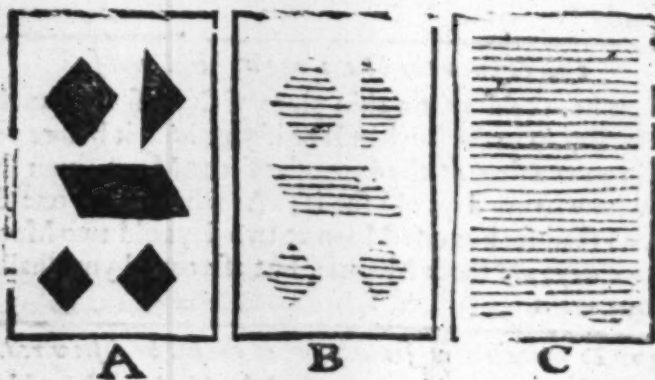
30. *To write letters secretly, that cannot be discovered.*

TAKE a sheet of white paper, and double it in the middle, then cut holes through both the half-sheets, let the holes be cut like the pains of Glass-windows, or other forms what you best fancy, and then with a pin prick too little holes at each end, and cut your paper in two halves, give one half to your Friend (to whom you intend to write) the other half keep to your self: Now when you do Write, lay your cut paper on a half-sheet of writing paper, and stick two pins through the two holes that it stir not; then through those holes that you did cut, VVrite your mind to your Friend; when you have done take off your paper with the holes again, and then Write some other idle words both before and after your lines, but if they were *Written to make* some little sence, it would carry the less suspicion; then seal it up and send it.

When your Friend hath received it, he must lay his cut paper on the same, putting pins into the pin-holes, & then

he can read nothing but your mind which you Writ, for all the rest of the lines are covered, observe the Figure, and it is easily apprehended.

Where the Letter A is placed, that doth signifie the half-sheet of cut paper with holes; *where* the Letter B is placed, doth signifie the substance of the Letter *which* you Write, and *where* the Letter C is, doth signifie the Letter filled up with lines to joyn to the other words. Now *when* your Friend VVrites to you he must do the like.



Another.

Write a Letter (what you please) on one side of paper with common Ink, then turn your paper, and Write on the other side *with* milk, (that *which* you would have secret) and let it dry; (but this must be Written *with* a clean pen:) Now *when* you would read it, hold that side *which* is Written *with* Ink to the fire, and the milky Letters will then show *blewish* on the other side, *which* may be perfectly discerned.

31. To fetch Oyl, or Grease, out of Books, Writings, Papers or Garments.

GO to the Apothecaries or Grocers, and buy a penny worth or two of the Oyl of Turpentine, and put a drop or two upon the place *which* is Oily or Greasy, rubbing it on, & then you shall see *how* it will drink up the Oyl

or Grease, and be presently dry and fair for this Oyl of Turpentine is a great dryer, and is good to put amongst Oyl colours, to make them dry speedily.

32. *How to refresh and scour old Pictures, that are wrought in Oyl, making them to look almost as fresh as if they were new done.*

TAKE the Picture out of the frame, then wipe or brush off the dust very clean, and then lay it level upon a board, or table, pouring good sharp Vinegar all over the same, & there let it lye and soke for thee or four hours; if the Vinegar be dried up, then pour on more, continually keeping it Wet: then beat a piece of dry brick very fine to powder, (and see there be no lumps or stones therein, for they will raze and scratch the Picture) and then put the powder into a course linnen rag, and tye it, and then dip it well in a Porringer of Vinegar, and with your rag and powder, rub and scour your Picture all over very hard, & then with fair Water or a Wet clout, Wash the filth away: But if you see any spots or filth remain, then scour it again and wash it; then dry it very well with a cloth, and when you have dried it, put it again into the frame, and set it in the Sun for a day or two, (for the Sun refresheth the Colours very much) and then rub it hard with a dry VVoollen cloath till you make it shine, and then hang it up. This will cause it to look almost as fresh as when it was new.

Some use to wash them in Soap, and then Oyl or Varnish them over, but that is not good, because that the Oyl or Varnish will turn yellow and gather dust.

33. *To keep Sword-blades, Halberts, Pistols, Knives, Edge-tools, or other things free from rusting for 7 years or more, in a dry House.*

TAKE Fish Glew, or Ising-Glass and cut it in pieces, then with a Hammer beat or bruise it upon an Anvile, or stone, and then put it into a little skillet, or such like, with Water, and let it dissolve over a gentle Fire, still stirring it as you do your common Glew; then when it is well boyled take it off, & with a Pencil, or small hair brush, lay the same,

while it is hot, all over your Sword-blade as thin as may be, and then lay it to dry, and it is done. This thin coat keepeth the moistness of the Air from the Mettle, that it cannot rust, but when you are to wear it, or use it, take a blunt knife, and you may easily scale off the thin substance, and then it will be as bright as any Silver.

I verily believe, that our common Glew will do the like keeping of it in a dry room.

34. *An excellent Cement for broken Glasses, China-dishes, or Cups, and such like.*

TAKE one part of Virgin-wax, and two parts of the tears or clear drops of Mastick, melt them together and Cement therewith. But the better is, if you beat the whitish Fish-glew or Ising-glass with a hammer till it begin to be clear, and then cut the same into very small and short pieces, and dissolve and melt the same over a gentle Fire with *Aqua-vitæ*; then let one that standeth by, hold both the pieces that are to be cemented over a chafing-dish of coals till they be warm; and during their heat, lay on the dissolved Glew with a fine Pencil, then bind the Glass with Wyre, or Pack thread, to keep it steady, and so let it remain till it be cold and dry.

Another.

Take a little quantity of unslaked Lime, Wheat flower and the white of an Egg, and incorporate them together. Mastick, *Aqua-vitæ*, and white Lead is good; so is Ising-glass, being dissolved and melted with Rhenish-wine.

35. *To grave Arms, Posies, or other devices upon Eggs, which may be served at a Table.*

MELT Suet pretty warm, and dip in your Eggs in this manner, hold the Egg between your thumb and your fore finger, and quickly dip one half therein, and hold it in your hand till it be cold, and then dip in the other end that it be thinly covered all over, then take a little Bodkin or needle, and grave in the Suet what Letters or Words you please, then lay the Egg thus ingraven in good Wine-vinegar, or other vinegar in some stone Pot or Vessel for the space

space of six or eight hours more, or less, according to the strength or sharpness of the same, then take out the Eggs, and in hot *Water* dissolve the Suet from the Shells, then lay the Egg to cooll, and the *work* will appear to be graven in the shell of Russet colour. And if the Egg lye long enough in the Vinegar after it is so graven, the Letters or *Works* will appear upon the Egg it self being boyled, and so you may serve them up at the Table. And if you care not to lose the meat, you may pick out the same, when the shell is through graven and you shall have a strange piece of *Work* performed on the same.

36. To make Wax either red or green.

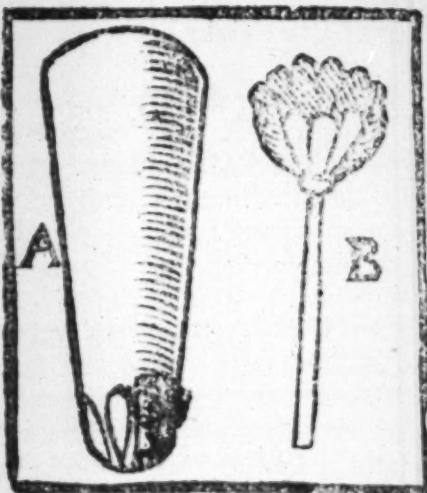
TAKE to one pound of *Wax* in Summer, three ounces of the clearest Turpentine; but if you make it in *Winter*, take four Ounces of Turpentine. melt these together over a soft fire, stirring them with a stick, and when they are well melted together, take it off, and let it cool a little, and then mix with the same the red root of *Anchusa*, or Vermilion ground an ounce, and an ounce of sweet Oyl; stir these well together again over the fire, then take it off to cool, and pour it into cold *Water*, and then upon a *Wet* board, and your hands *Wet*, you may roul it into what form you please. Instead of Vermilion, you may take three times as much Red-lead, but that is not so good.

If you will make *Green-wax*, instead of Vermillion take the like quantity of Verdigrease.

37. To cast off Flowers in Wax, of divers colours.

CAUSE a Stick to be turned round at one end, (somewhat *Taper-wise*) like the fashion of a poking stick, lesser, or bigger, (according to the bigness of the Flower you intend to cast) and at the smaller end thereof, with your Knife, cut rents or *nicks* in the same, *long-wise* as you

see here in this Figure ;
The letter A. signifieth
the *Stick*, the letter B
signifieth the *Flower* :
then take a little *panikin*
& in the same melt your
Wax with a gentle fire,
and when it is melted
take it off, and then take
your *Stick* (having a
Porrénger of fair *Water*
by you) & dip the end
into the *Water*, & then
shake off the *Water*, or
suck it off, and then dip



the *stick* in the *Wax*, and suddenly pull it out again, dipping it into the *water* again to cool it, & then you may take off your *flower* & lay it by : and in this sort you make as many as you please: for yellow *Flowers* ; melt yellow *Wax* ; for Red, red *Wax* ; for white, white *Wax* ; for green, green *Wax*. Now for *stalks* for your *Flowers* you may stick in a small *Wyre*, or a Bent of a *raison-frail*, or the like. You may have the coloured *Wax* ready made at any of the *Wax-handlers*.

38. To make a bunch of *Grapes* with Green *Wax*, that will seem to be Natural.

YOU must get a little *stick* turned round at the end, about the bigness of an *Arrow* ; and then have your vessel of green *Wax* melted, (as was shewn in the former Receipt,). dipping your *stick* in the same about the third part of an Inch deep, and it will be almost in the fashion of an *Acorn cup*, make a good many of them. Then take an *Egg*, and make a little hole in the bigger end of the shell, less than a penny, and get out the yolk thereof, and dry the shell ; then with a piece of your green *Wax* hold it to the fire, rub or daub the shell therewith thinly all over, then hold the shell in your left hand ; and with your other hand take up first one cup, holding the same a little near a candle so warm ; and quickly stick it on your egg, and so do with all

All the rest of the cups, till you have filled it all over; they must be set something close together. Now when you have thus done, take a little stick, about the bigness of the tag of a point, and tye a pack-thread in the middle thereof, and then put the stick into the hole of the shell, and so hang it up; you may cut leaves like Vine leaves in green paper; and fasten them to the string or stalk above the bunch: I have made some Womens Teeth to water at this conceit, they seem so natural to the Eye; and these Grapes will last all the year.

39. To grave and in-lay Colours into Gold, Silver, Iron, or Copper, to shew like Ammel.

First, cover your Metall with a crust of warm Wax, and when it is cold, with a fine sharp bodkin, draw or cut out the shape or proportion of what you please, either letters, Flowers, Borders, or Scutcheons, of reasonable largeness: then pour upon the same empty places (which you have ingraven upon the Wax) some few drops of strong Water or *Aqua-fortis*, and let them lye a while, and when you find them deep enough graven, mingle Orpiment and Mastick melted together for a yellow colour, and Vermilion and Mastick for red, and Bice and Mastick for a blew, and Ceruise for white, and Ivory burnt for a black. Now when your Mastick hath been melted with any of the foresaid colours, let it cool, and beat the same into powder, & lay the same powder within the graving, and after lay the mettle upon a small Char-coal fire till the Mastick be melted, and it will remain fast and firm therein a long time.

40. To In-lay Boxes, Cabinets, or other things with hard Wax.

With a pen draw upon your Box any thing what best pleaseth your fancy, as Birds, Beasts, Flies, Flowers, Fruits, Leaves, Trayls, Anticks, Letters, &c. Then take a little Knife ground sharp at the point, & cut or grave out the work pretty deep which you have drawn with your Pen upon the Wood; when you have so done, lay upon the same some red or green hard Wax, and with a hot Iron melt and rub hard the Wax all over into the crevices, or works which you have cut out, & so let it cool: then

take a Knife and scrape away the Wax to the board, & then you shall have your work which you drew, to be insaid very perfectly in the colour of your wax, as though it were drawn with a Pen, & will never wash nor wear off, when you have scrap't it clean, hold it a little to the fire, and it will fetch a gloss on the wax, and make it to shew the pleasanter.

41. *How to harden the white of Eggs into an Artificial Gum fit for many uses.*

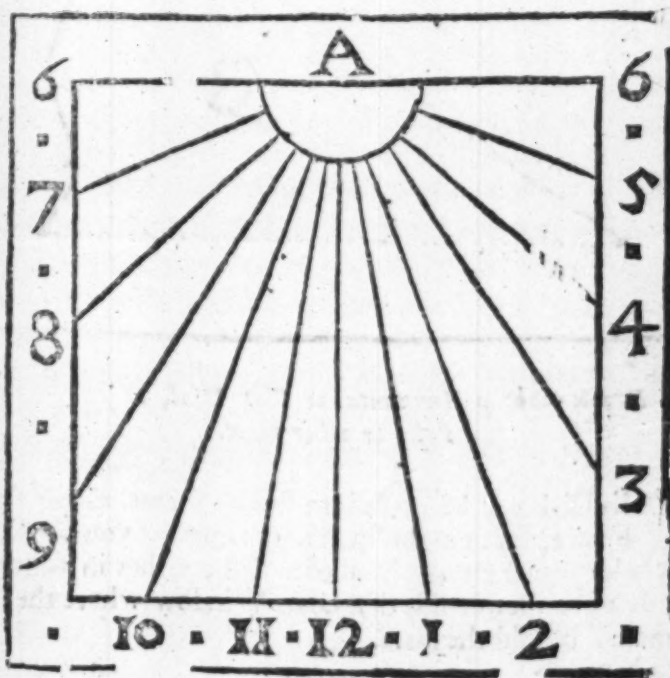
Separate the Whites of Eggs clean from the yolks, and beat the Whites very well into a clear oyl, or water, and when it is settled, skim off the froth; then put the same into Bladders, and hang them in a chimney-corner where fire is usually kept to dry, and in a few days the same will become as hard as Gum Araback: in hot weather you may hang your Bladders in the Sun to dry: This Gum may be used instead of other Gums, and with it you may varnish Prints, or other things that are washed in colours.

42. *To make a true South Sun-dial, to be placed upright against a Wall, or on a Pole.*

Intend not to speak of the multiplicity of Geometrical and Artificial sorts, and making of Sun-dials, (of which many Ingenious Artists have copiously Written (but a Mechanick way of two sorts, for the benefit of some who would be glad to know how the hours of the day pass away.

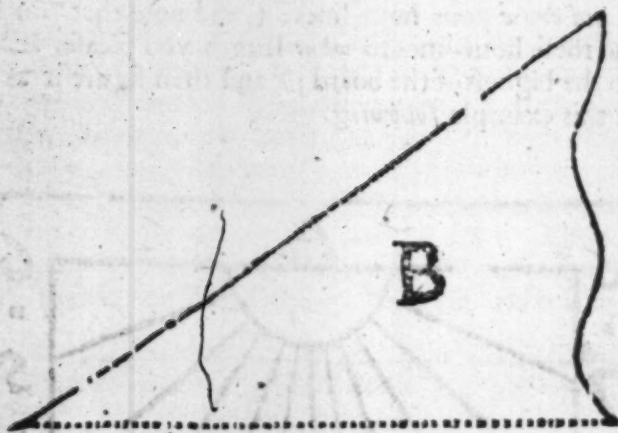
Take a piece of good Writing paper, & rub it over with Linseed-oyl, and hang it to dry in the Sun, when it is thorough dry, take and lay it over this print of the Dial (or some other of this nature) that you may see the hour lines through it, holding of it safe from stirring (which may be done by pinning it to the margin,) then at the center by the letter A. stick a Needle or Pin upright, and laying a straight ruler close to the pin, draw all those hour-lines which you see through the Oyled Paper; then take off the paper, and when you would mark out a Dial, do thus: get a board of what size you please that is smooth plain-ed, and will not warp, drawing a streight line just down the

the middle thereof, and lay this paper thereon, and then put your pin thorough the center hole toward the top of the streight line on the board, and put another pin towards the bottom of the line, which is your 12 a Clock line, with a bodkin prick a hole thro' every hour line of your paper into the board, and then take it off; then stick your pin into the center hole of the board again, and laying these two pins keep your paper steady, then with a small ruler close to the pin, and close to each hole in the board, mark and draw your hour-lines; (and note that you may extend these hour-lines to what length you please, according to the bigness of the board;) and then figure it as you see in this example following.



Now for the Cock or stile of your Dial, it must be set in the 12 hour line, and must be just equal in height from the

the board, as the triangle Figure maked with B. sheweth; the line with pricks is but to direct you which side must be next to the board: The Stile may be made of a thin Iron plate, and cemented in, or of a stiff Wire; the upper end of which must be put just to the center by A equal to the 6 hour line: when this is done, you must get some Painter to paint it in Oyl-colours, and so set it up



43. *How to make a Horizontal or Flat Dial, to stand upon a Post, or other place.*

THis Dial may be made into sundry forms, either four square, six or eight square, or round as you please, it is to be placed on the head of a Post; either in Garden Yard, or at the out-side of a Glass Window where the Sun cometh: behold the form.

B. shew
which side
made of
Wire; the
ter by A
must ge
set it up



and upon

either four
a please,
n Garden
ere the Su

You must note, that the hour - lines of this Dial do vary from the former, and so doth the Stile in height: But you must work with this as in the other with your poyled paper, to draw the hour - lines, and to make a line just in the middle for your 12 a clock line. The center of this dial is hard by the letter C. and must be more near the middle than the other, because it containeth more hours thereon, for the other will serve but from 6 to 6, but this from 4 to 8. You may make this Dial in Stone, Wood or Mettal, and remember to make the height of this Stile or Cock according to this triangle marked with the letter D. for it must be higher, as you may

R

may

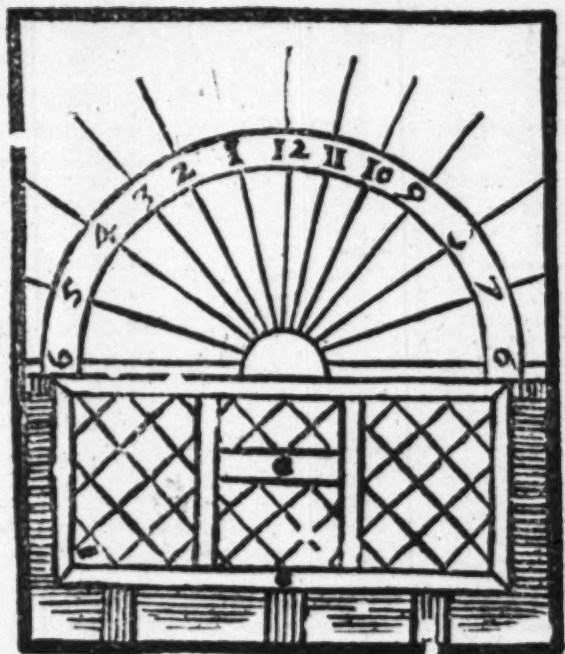


may perceive by this Figure. You may make Cement for to fasten the stile, with Rozen, powder of brick and some chalk, mingled together, and with a hot Iron melt it into the crevise.

Note, That these Dials will not serve in any part of England, but within 10 or 20 miles of London.

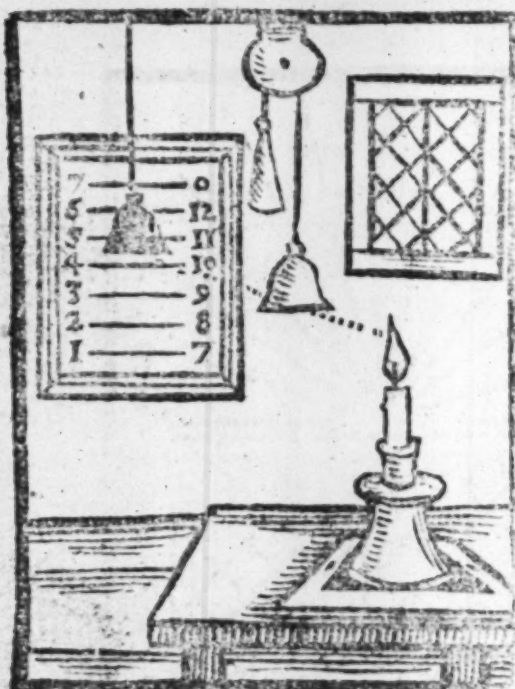
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44. *A pretty way to make a Sun-Dial on the Cieling of a room or chamber, whereby you may know the time of the day, as you lye in bed.*

IF you have any Window South-East, or South, which is best, and that is for your turn, in the lower post or frame of the inside of your window, about the middle, fasten with Wax a little round piece of Looking-glass, or other glass, about the bigness of a two pence, (you may cut it round with an old pair of Scizzars; but if you place it higher in your Window on a ledge, it will be the better, (as you may see here in the Figure,) setting it level with the Horizon; and the reflection of the Sun in the Glass will shew on the Cieling the hour of the day, the center of the Dial will be without the window, and not perpendicular to the Glass. This Dial must have no Stile, and must be made like the last Horizontal Dial: you may draw the circle, hour-lines, and figures with a pencil or coal, the black spot is the piece of Looking-glass, the Dial is the Cieling.



45. How to make a Candle-Dial, whereby you may know the hour of the Night.

ONE Winters evening sitting by the fire, me thought there might be some device for a Candle-Dial; At length it came into my head, I made a little four square frame of Wood, of a piece of a thin Trencher, making the inside thereof fit for the bottom of a Candle-stick to stand in, which I did ordinarily use; on two sides of the square I fastened a little piece of Wyre, not a quarter of an Inch long, and just where the Candle-stick should stand, on a Table or Board, I made two little holes with a Bodkin for the ends of the two Wyres to go into, and then I set down my Candle and Candle-stick into the square: Having thus done, I made a long Frame like the Frame of a Picture, and pasted half a sheet of white paper therein upon a thin board,



and so hang'd it up against the wall; Then in the Ceiling I fasten'd a small Pulley, & on that Pulley I had *two* little plummetts of lead, one broader at the bottom than the other, and ty'd them to a piece of Packthread at each end, and so hung them in a pulley (as you may better apprehend by the figure, the broadest Plummet I pulled down till it gave a shadow

on the lower end of the paper in the frame on the wall (which is now the 1 and 7 a clock line, and where the broad bottom cast a shadow I made a speck with my pen, and then turned an hour glâs, and when that was run out I made another speck, which is the 2 and 8 line, and so of the rest: by these divisions, you may with a pair of compasses divide the rest of the hour line upwards, you must pull down the broad Plummet & set it at any time to what hour you please, as by this, it shews that it is half an hour past 4 or 10 of the Clock. You must remember to have your candles always of one size or weight, as of the eight or twelves in the pound, or such as you usually burn. You may take away your Candle and Candlestick out of the square frame if you have occasion, and then set it down in its place again, which keeps all right. I have placed the Figures at each end of the hour lines, as from 1 to 7 on the first side, and then from 7 to 12 on the other side. Note when it is just 7 on the first side, then pull down the Plummet

net to 7 on the other side, which I hold to be the best way.

16. *How to keep Cherrie Pears, Nuts, or other Fruit a year as fresh as they came from the Tree.*

Vhen they are pretty ripe, cut off the stalks, and put them into an earthen pot well leaded, and then cover them well with Honey, then stop the pot with Pitch or Wax, that no ayre may enter in, and then put the pot in some Cellar, or cool place, burying it well in Sand; and so let it remain till you use it.

17. *How to make Grapes, and other Fruit to have no stone or kernels.*

It is said, that if you do plant or set the smaller end of the twig of a vine some-what deep into the earth (which will take root) that those Grapes that will grow thereon shall have no stones, the like effect have peaches, Apricocks, Damsons, and other Stone-fruits, if the small end of the vines be grafted into the stocks. Also if you bend down both the ends of an Apple or Pear-tree cyon, and graft them on both sides of the stock; and the next year when they have grown, cut the cyon in the middle, one shall bear fruit with kernels, the other none.

18. *How to make yellow Roses grow, and to make Trees and other things grow green all the year.*

Have been informed, that if you graft a white Rose upon a broom stalk, or on a Furzen bush, that the same will bear yellow Roses, but they will have no sweet scent.

Also, if you will graft a Rose, or other thing upon a holly stock, the leaves of the same will grow green all the the year.

19. *How to make Apples, Pears, and other Fruit of several colours, and to give them a dainty tast of Spices.*

If you will give a pleasant colour to your Fruit, do thus; for a red, boyl Brasil, Turn-soyl or Sanders, and for yellow use Saffron or Turmerick. Now to give them dainty tast and smell, you must beat Cloves, Mace,

G

Cinnamon,

Cinnamon, and Nutmegs to powder, and mix them with the Water of your colours with some honey; then with an auger bore a hole in the biggest part of the Tree, unto the middle, some-thing sloping downwards, and then pour your water and spices into the hole, then with a pin made of the same Wood, or tree, beat it hard into the hole, and saw off the end, and wax it about: This must be done in Winter before the Spring, because when the sap riseth, the colour, scent, and taste also ascendeth with the same.

50. *An excellent way for baking of Bread that it shall not be hard crusted, nor yield so many crums.*

GO to the Plate-worker, (such as maketh ordinary dripping pans) and cause him to make a pot, or pots of his Latten-plate, which may contain half a peck, or greater, or less, as you please, according as you mean the bigness of your Loaf shall be; let this pot be made with a bottom at the lower end, and open at the top, almost like a beaker, as you may see here by this Figure, and when it is done, take a little Butter, and anoint the in-side of the pot therewith, and when your Dow is moulded, put it into the same, (not full to the top) and thrust it down hard to the bottom, and then set it into an Oven amongst other bread, with the lesser end down-ward, and when it is baked, it will easily come out: this Loaf will have no hard crust, nor crum as other Loaves do, and will shew smooth, standing like a Sugar-loaf upon the Table, and in a little compass.



If you kneed your Household Bread very well, and use Leaven, and bake it, letting your oven Mouth stand open, it will be much whiter and better and keep a long time.

51. *A dainty strong, and glistering Mortar, or Plastering for Cielings, or for Walls.*

IT is said that in *Italy* they much use this Conceit for plaistering of their Cielings, Floors, or Walls, which is by mixing and well tempering together Oxen and Cows blood with fine Loam or Clay, and it will be very strong and binding substance, and being well smoothed it will glister, and become very hard.

52. *To give ease, and help the raging pain of the teeth without drawing.*

THIS is also performed with the Spirit of Wine, or good *Aqua-vitæ* (as you have read in the former Receipt) by pouring it into the ears, especially on that side where your pain lieth: but after that you have let the water run forth of your Ears, then with more of the same Water (against the fire) you must rub and chafe your cheeks, and under your jaws, and behind your ears, stroaking of them upwards with your hands toward the neck, to drive back the humours: for it is nothing else but a cold rheum that distilleth from the head into the gums which causeth the pain: therefore be sure to keep the head very warm when you have done.

I have been certified (but how true it is I know not) that three teeth taken out of a dead mans skull, and sowed in a clout, or piece of leather, and worn about them, which were much subject to the Tooth-ach, gave them present ease, and they were never troubled with the same so long as they had them about them.

53. *A dainty Receipt to strengthen and comfort the Eyes.*

THIS Receipt I had of a curious Ingraver, and my friend who every morning before he went to work, in the corner of his hand-kerchief, (or a clean linnen rag) did put a few drops of *Aqua-vitæ*, and with the same did wipe the corners of his eyes, eyebrowes, and temples; which did keep back the Rheum, & greatly did strengthen and comfort the Eyes; of which I have often made trial and found much comfort.

54. *A precious Salve for those that have had any member out of joynt, called Jeremy of Brumswick's Salve.*

THis famous Chirurgeon, with this Salve, hath healed those that had formerly their members out of joynt, or those that had been wounded and could not stir or bow the member where they had the hurt: for by this Salve did he bring many stiffe and crooked joynts again to their former strength, to the great admiration of all men, both Chirurgeons and others.

How to make the Salve.

Take two ounces of old Hogs-grease, & of Ducks-grease, and Goose-grease, Hens or Capons-grease, of each two ounces; Linseed-meal, Fenugreekmeal, of each two ounces, Oyl-olive eight ounces: Opopanax, Mastick, and Frankincense, of each one ounce: dissolve the Gums in white wine that are to be dissolved, and powder the other, mingle them all together, and add wax and turpentine to them, then boyl them all together with good stirring.

55. *An excellent Unguent, or Liniment for green Wounds, especially for those in the head.*

TAke of the best Turpentine an ounce and a half, and as much of Gum Elemi, or Capons-grease an ounce, melt these at the fire, and mingle them. When you use it, mele it, and anoynt the edges of the wound, and dip a pledge of lint in it, and then lay a plaister on the top of the same, and roll it gently.

56. *How to make a soveraign Oyl, or balm for all wounds simple or confus'd.*

TAke three pound of common Oyl, two pound of Turpentine, wheat that is cleansed five ounces, Saint Johns wort a pound, Valerian, Carduus Benedictus, of each fourteen ounces; bruse the Herbs, and infuse them in white wine six or eight hours, then put thereto the wheat and Oyl, and boyl them on an easie fire, till the wine be consumed: then strain them, and put the Turpentine in, and then boyl them again on a soft fire to perfection. 57. *An*

57. *An excellent Emplaster, good for all Wounds or Ulcers.*

TAKE Deers suet four ounces, Rosen and Perrosin, of each a pound and a half, white wax, and Frankincense, of each four ounces, Mastick an ounce; melt the wax and suet, and powder the gums, and put them together, and when they be melted, strain them through a piece of Canvas, then add to them a pottle of white-wine, and boyl them all to the composition of the wine, with continual stirring, and then take it from the fire, and when it is almost cold, put thereto four ounces of turpentine washed in white wine, and of camphire powder'd two ounces; then make roubles of it, and keep it for your use.

58. *Another excellent Plaister for wounds in the Breasts, or other parts.*

TAKE Rosin that is fresh, clear and sweet, a pound, Oyl of Bays, and turpentine, of each two ounces; Gum Elemi sweet & good four ounces; melt the Rosin & Gum together, and stir them well; then put in the Oyl and turpentine, and let it boyl, with continual stirring, and then strain it, and reserve it for your use in a close pot.

When you use it spread it on a piece of leather, bigger than the wound by three fingers breadth, and make a hole in the middle of the leather for the corruption to run forth, this doth it without tent or pledges, dress it twice a day in the Summer, and once a day in the Winter.

This plaister is good for all Wounds in the breast, or other parts; for it draweth the hollow parts of all wounds, and strengthens the parts, clearing them from unnatural matter, and dryeth all wounds caused by thrusts.

59. *Of the general significations of sicknesses, either present or near at hand.*

THese following presages and tokens of sicknesses are worth the observation of all men; First, to prepare themselves for God, if he be pleased to call them; otherwise that they may in time, before they be too much spent, have the counsel and help of learned and expert Physicians.

Signs of Sicknes are these.

If the body be hotter, colder, moister, dryer, leaner, fatter, or the colour more pale, or more swarthish, or the eyes more hollow than they were accustomed to be, and on the sudden change, all these are certain fore-runners and messengers, that the body is disposed to sickness, or already sick.

60. *Of the signification of the severa' colours of some Urine.*

THE colours and Symptons of Urines are many and various, as are the diseases, and therefore ought to be judged on by the learned; but thus much in brief.

Red and thick Urine, betokeneth sanguine.

Red and thin, betokeneth melancholy.

White and thick, signifieth flegm.

White and thin, betokeneth melancholy.

The highness of the colour signifieth heat, but the pale, black or green, betokeneth cold.

Also, the grossness, or thickness of the urine signifieth moisture, the cleanness, or thinness dryness.

Urine of the colour of bright Gold, or of the colour of Gilt, signifieth perfect digestion, or health.

Red as a red Apple, or Cherry, or base red like bold Armoniack, or red like glowing fire, betokeneth excess of digestion.

Clear and white like water, or gray as a horn, or white like whey, or the colour of a Camels hair, signifieth lack of digestion.

Pale, like to broth, or flesh sodden, betokeneth the beginning of digestion.

Citrine colour, or yellow, sub-citrine, or paler, signifieth the middle of digestion.

Colour of a Beasts liver, or of dark wine, or green like to Cole-worts, sheweth adustion of humours.

Urine of a leady colour, or black as Ink, or black as horn, or dark above, and clear beneath, betokeneth feebleness of nature, mortification and death.

To take spots of Ink out of Printed Books.

Take a little spirit of Vitriol, or else a little Aqua-forti

and with a Feather anoint it over, and it will speedily
vanish.

Take a quantity of Snails, and make them void their
limyness, then dry and powder them, then make a loaf;
and a mouthful of that will suffice to live on 7 Days.

To make a great deal of Cream.

Take a Red Snail, and by a thread let him hang in the
middle of your Cream Vessel, and all that is above the
Snail will turn to Cream.



G 4

Here



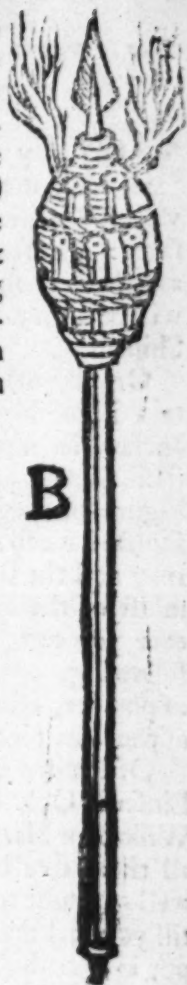
Here follow Necessary and
serviceable Fire-works both for
Land and Sea Execution, and
first for the Pike.

HAVING treated of Recreative Fire-works, I hold it convenient to speak something in brief concerning works for Service (necessary for these times) both for Land and Sea ; which may thus be performed.

If you would make good a breach, or enter a Ship, then take strong Canvas, being cut, sewed, and tyed hard on a Pike with Marlin cord, then with this Receipt following, being compounded and wrought together, do thus.

Take Roch water one part, and Peter in meal, as much Sulphur mealed two parts, three parts of Rosin, in roch, Turpentine one part, as much of Linseed Oyl, one half part of Verdegrease, Bole-armoniack, Bay-salt, Colophonia, of these three one third part, and if you think fitting, half a part of Arsnick : Then coat the same over with this liquid mixture melted in a pan or pot ? Take four parts of Pitch, one part of Linseed oyl, one third part of Turpentine, Sulphur one part, Tar one third part, and one part of Tallow. After these are melted, and being cold, bore two holes in each of the same an Inch deep with a sharp Bodkin of Iron, filling the same with fine bruised Powder, and put in each hole a little stick of two or three Inches long,

long, to be taken out when you would fire the same: (This composition will burn furiously.) If you please, you may fasten to the same receipt on your Pike, divers light Pipes or Canes of Iron, or Brass of six or seven inches long, being Pistoll or Caliver bore (as the Figure marked with B. sheweth) placing the touch-hole thereof close to the Canvas, boring the said Canvas through, & priming the same with fine powder, pasting a paper thereon, and then coat the same over as before said; This being charged with powder and bullet, will do great execution in a throng, either defensive or offensive.



B

*How to arm a Dart or Javelin with Wild-fire, for the Sides
or sides of Ships.*

YOU may arm a Dart, Javelin, Partizan, or such like weapon to do excellent service, being in the hand of a valiant Souldier, as you may see by the Letter C. in the same: The same should be filled with the self like Receipt as before is shewed for the pikes with Wild-fire, which will be a very good weapon to go into the sides or sails of Ships.

Or you may place upon the staff of your Javelin certain Pistol barrels of one length, about ten or twelve Inches, letting the same into the wood round about the staff a little, as a Pistol barrel is into the stock (as the Figure marked with the letter D. sheweth) which staff should have so much substance at the one end, whereto you may nail the same barrels fast at the breech; and about the midst of the same put over a hoop of Iron, as close as ever you can, the which is to be charged in this manner following, viz. First charge every barrel with two inches of powder, after put in a bullet a little lower than the bottom of the same piece; then take of this slow Receipt following.

Of bruised Powder four parts, of Salt-peter in meal Linseed Oyl, Brimstone finely beaten, Varnish, and of Willow or Hazel cole moistned with a little Vinegar: (of all these five last ingredients one part;) which must be well wrought together with the hand in some wooden Vessel till you feel that it will cling together; of which you must put in after the bullet two inches, and thrust the same together with a Rammer stick; and then again put in two inches of powder, and after that a bullet; and lastly, two inches of this slow Receipt, until you have filled every one of the said barrels within half an Inch of the mouth the which is to be filled up with the said slow Receipt and powder bruised and mixed together, that it may the sooner Fire: This being done, bind a paper over the mouths of the same, until you will use them; and giving

giving fire to any one of the same it will fire all the other, and every one will discharge three or four shots a piece one after another, to the hurt of the enemy, being used in service either to offend or defend, to the pleasure of the beholders, being used in triumph with bullets of Receipt rolled in tow, and coated with brimstone.



How to defend a Breach in a Ship or other place of defence.

TO perform this, you may arm a Partezan, Javelin, or Fork with Fire-work, and to shoot every one of them with seven or eight pistol or musket bullets in nailing a plate of Iron crosse the pike or point of the said Javelin, or between the grains of the fork, piercing certain holes through the same unto which with a strong wyer, you may make fast on either side so many pipes of Iron, of seven or eight inches long, as you think convenient to fix upon either or any

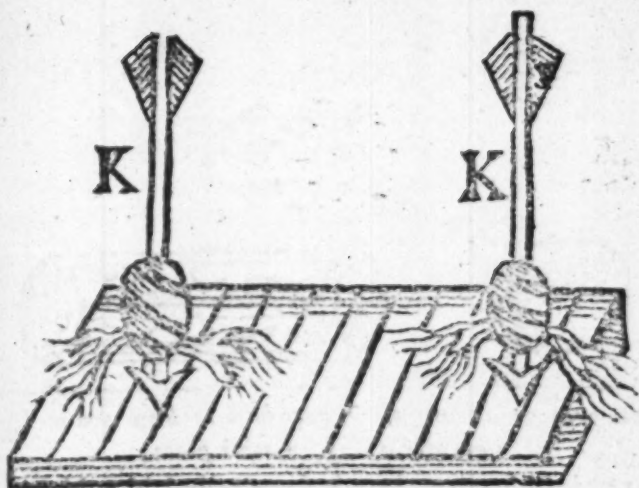
any of the said weapons, and charging the same with powder, bullet and wad' you may cause the same to fire one after another, in filling a roul of Canvas sewed together, (as the figure F sheweth,) with slow Receipt, & coated as before is shewed: And this being placed artificially upon the short barrels or pipes (as the figure G H sheweth) and primed with fine powder directly against the touch holes of the barrels, pasting a little paper over the



same, fixing the said trains at both ends, which as they burn, shall still discharge the short pieces one after another to the great hurt of the Adversary.

How to burn Wooden Bridges, Gates, Houses, &c.

TO perform this and the like military Service, if you can come to anoint the same with some such liquid composition as is before shewed for the coating of Fire-works, melting in the same a good quantity of bruised brimstone, and sticking in the same arrows of Wild-fire, made in



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in proportion, as the Figure K doth shew. The Receipts may be made as the former for Pikes, with Wild Fire, which will certainly set the same on fire, for the Receipt is so forcible that it will burn in the Water.

How to do excellent Service against an enemy who would enter a Breach, a Gate, a Bridge, a Ship, &c.

, &c.

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If that the Enemy will enter (and that you intend not to yield) it is necessary to have in readiness divers hollow bullets made of two plates of Iron, or other metal, so that the one may close about the other round like a box, which being filled with pebble stones, square pieces of Iron, called Ice-shot, musket bullets, or the like, which being discharged out of a murdering Piece, it will do great execution: if you will fill cases of wood, made like unto a Lantern with the same stuff, it will perform the like service,

I

being

being shot out of a Murdering Piece: Behold both the figures marked with the letter A.



How to prevent a train of Powder laid to blow you up before you enter a Ship, or other place.

IF you imagine that there is some train laid to blow you up (as it often happeneth) you may prevent the same, by washing certain Purfes of Canvas, filled half full of good Corn-powder, and with eight or ten fiery bullets of an inch, or an inch and half in height, and filling the other part of the Purse with slow Receipt, you may when you think good (the Receipt being well fired) throw the same from you, which will burst in pieces after the lighting on the ground, and disperse the said inclosed bullets here and there, which bullets will burn furiously, and if there be any train of powder laid near it will presently fire the same. The said purses are very good to throw out of hand, or may be shot out of a Morter piece amongst men in battle array, to disorder them, or into a Town; the Figure B sheweth how to fill the purse and the Letter C sheweth the proportion of it; being made up, filled and coated over.

The Receipt for making these bullets of Wild-fire following: Take of Sulphur in meal six parts, of Rosin, in meal three parts, melting the same in some pot or pan over a slow Fire; then take of Stone-pitch one part, and

have

both the

with variety of Inventions.

51

hard Wax one pound, of Tar one fourth part, of Aquavint one half part, of Linseed-Oyl as much, of Verdegrease one fourth part, and of Camphire one Eighth part, melting all these together likewise, and stir into the same two parts of Peter in meal; and taking the same from the Fire put therein four parts of bruised Powder, working the same well together in your hands, and roul the same round of the bigness that you would have your balls of, boring two holes through the same a cross, which when you would use, must be primed full of bruised Powder; these balls will be as hard as stone, and need no coating, and being Fired will burn furiously, and cleave to any thing, not diminishing in quantity being burned to ashes, which ashes will kindle an Oaken board: If you please, you may shoot these bullets out of a Piece of great Ordnance. The Figures for the Purposes here follow.



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C



To Drive away Mice.

Take *Vervain* and steep in Water 24 hours, and sprinkle about the House, and they'll fly away.

To make the Hair quickly grow.

Take the Juice of *Nettles*, that grow in the Sun Rising, moisten your Comb Teeth with it, and every Morning Comb the Hair upward; probatum.

To whiten Teeth.

Take Syrup of *Roses*, *Rose-Water*, *Honey*, *Plantain-Water*, of each half an Ounce, *Spirit of Vitriol* four Ounces, mix them together; and then rub your Teeth with a Linnen cloath, and wash them with equal parts of *Plantain* and *Rose-Water*, or rub your Teeth with *Brick-dust*, and it will whiten them.

I 2

Experi-



Experiments perform'd by **Legerdemain.**

How to make it freeze by the fire side.

THis feat cannot be performed at every time, but only in Winter, and at such times as snow may be had, and he that will shew it, must have in readiness an handful of salt. The time serving and the party provided, let him call for a joynt-stool, quart pot, and a handful of snow, a little Water, and short staff or stick; first, let him pour a little Water upon the stool, and upon it let him set the quart pot, and put the snow into the pot, the salt also, but privately, then let him hold the pot fast with his left hand, and take the short stick in his right, and therewith churn the snow and salt in the pot, as if one should churn for butter, and in half a quarter of an hour the pot will freeze so hard to the stool that you can scarcely with both hands pull it off from the stool: there is a natural reason may be given for this, which he that is a Scholar need not to be told, and for a common Jugler I would not have so Wise as to know, therefore I omit it.

How to make two Bells come into one hand, having put into each hand one.

THis feat must be performed with three Bells, you must put one Bell into your left sleeve, then put one bell into one hand, another Bell into the other hand (they must

must be little Morris Bells) *withdraw* your hands, and privily convey the bell in your left hand into your right hand : Then stretch both your hands abroad, and bid two folks hold your hands fast, but, first shake your hands, and say do you hear them. The Bell that is in your sleeve will not be known by the rattling, but that it is in your hand : Then say, he now that is the arrantest Whoremaster or Cuckold of you both shall have both the Bells, and the other shall have none at all : open your hands then and shew them, and it will be thought that you deal by Art Magick.

How to make a Jugling Book, or Book of Wagery.

YOU must provide a Paper-book in *Octavo*, of what thickness you please, first turn over seven leaves of it, and then upon both the open sides, draw or paint the Pictures of flowers, then turn over seven leaves more and paint the very same ; do this untill you have turned the book once quite over ; Then unto the farther painted leaves, paste a little stay of paper or parchment one directly over another. Then turn over the book again, and having turned every sixth leaf, draw the picture of flower-de-luces, and then paste staves of parchment upon them as you did upon the first ; but these staves must all of them be a little lower than the former. Then turn over the book again, and after the fifth leaf throughout the book is turned, paint horns : do thus until you have painted the book full of Pictures, only let there be one part of the leaves fair paper ; having thus finished the book, when you use it, hold it in your left hand, and with your right hand, your thumb set upon the parchment staves, shew them orderly and nimbly, but with a bold and audacious countenance, for that must be the grace of all your tricks : say, This book is not printed thus as some of you may suppose, but it is of such a property that whatsoever bloweth on it, it will give the representation of whatsoever he is naturally addicted unto, and then turn the book, and say, see it's all fair paper.

Boxes to change Grain.

Make one Box of Wood. Tinne, or Brasse, let the bottom fall a quarter of an Inch into the box, and glew thereon a laying of barley, or such like grain: draw the box with the bottom downwards, and say, Gentlemen, I met a Country-man going to buy barley, and I told him I would sell him a penny worth, also I would multiply one grain into so many bushels as he should need, then cast a barley-corn into your box, and cover it with a hat, and in the covering it, turn the bottom upside down: then cause some body to blow on the hat, then uncover it, and they will think strangely of it. You may make another box of Wood like unto a bell, to hold so much just as your former box will, and make a bottom unto this box of Shooe-soal leather, to thrust into the bottom of the Bell; then fill it with barley, and thrust up the leather bottom, for it will keep the barley from falling out, take this box out of your pocket, and set it down gently upon the table, and say, I will not cause all the barley to go out of my measure into my bell, then with a hat cover the box that hath the barley glewed unto it, and in covering it, turn it with the barley downward, then say, first, let us see whether there be nothing under the bell, and clap it hard down upon the table, so the weight of the barley will thrust the bottom down; then bid some one blow hard on the hat, then take it up, when they will see nothing but an empty measure, then take up the bell, and all the barley will pour out. Sweep it then presently into your hat or lap, lest their busie prying may chance to discover your leather bottom.

A Conceit to procure laughter.

Take a ball in one hand, and another in the other, and stretch your hands as far as you can one from the other, and if any will, lay a quart of wine with him that you will not withdraw your hands, and yet will make both of them come into either hand which they please. It is no more to do, than to lay one down upon the table, and turn your self round, and take it up with the other hand, and your Wager is won, and it will move no small laughter to see a foll so lose his money.

How to knit an hard knot upon an handkerchief, and to seem to undo the same with Words.

MAKE one plain loose knot, with the two corner ends of a handkerchief, with seeming to draw the same very hard, hold fast the body of the said handkerchief (near to the knot) with your right hand pulling the contrary end with the left hand, which is the corner of that which you hold. Then close up handsomely the knot, which will be yet somewhat loose, & pull the handkerchief so with your right hand, as the left hand end may be near to the knot: then will it seem to be a true and firm knot: and to make it appear more assuredly to be so indeed, let a stranger pull at the end which you hold in your left hand, while you hold fast the other in your right hand; and then holding the knot with your fore-finger and thumb, and the other part of your handkerchief with your other fingers, as you hold a bridle, when you would with one hand slip up the knot, and lengthen your reins. This done, turn your handkerchief over the knot with the left hand, in doing whereof, you must suddenly slip out the end or corner, putting up the knot of your handkerchief with your fore-finger and thumb, as you would put up the aforesaid knot over your bridle. Then deliver the same (covered and wrapt within the midst of your handkerchief) to one to hold fast, and after the pronounciation of some words of art and wagers laid, take the handkerchief and shake it, and it will be loose,

How to transform any one small thing into another form by folding of Paper.

TAKE a sheet of paper and fold or double the same, so as one side be a little longer than the other: then put a Counter between the two leaves of the paper up to the middle of the top of the fold, holding the same so as it be not perceived, and lay a Groat on the outside there right against the Counter, and fold it down to the end of the longer side: and when you unfold it again, the Groat will be where the Counter was, and the Counter where the Groat was, so as some will suppose that you have changed the mony into a Counter, and with this many feats may be done.

How to convey Money out of one of your hands into the other by
Legerdemain

First you must hold open your right hand, and lay there in a teaster, or some big piece of money, then lay there upon the top of your long left finger, and use some words of Art, and upon the sudden, slip your right hand from your finger, *wherewith* you held down the teaster, and bending your hand a very little, you shall retain the teaster still therein, and suddenly drawing your right hand thorow your left, you shall seem to have left the teaster there, especially when you shut in due time your left hand. Which that it may more plainly appear to be truly done, you may take a knife, and seem to knock against, so as it shall make a great sound: but instead of knocking the piece in the left hand (where none is), you shall hold the point of the Knife fast with the left hand, and knock against the teaster held in the other hand, and it will be thought to hit against the money in your left hand. Then after some words of Art pronounced, open your hand, and, when nothing is seen, it will be wondered at, *how* the teaster came removed.

How to make a Six-pence seem to fall through a Table.

YOU must have an handkerchief about you, having a Counter neatly sewed in one of the corners of it: take it out of your pocket, and desire some body to lend you a teaster, and seem to wrap it up in the midst of the handkerchief, but retain it in your hand, and instead of so doing, wrap the corner in the midst that hath the Counter sewed in it, and then bid them feel if it be not there, which they will imagine to be no other than the teaster that they lent you, then bid them lay it under a hat upon the table, and call for a Basin of Water, hold it under the table and knock, saying *vade*, come quick, and then let the sixpence fall out of your hand into the Water. Then take up the hat, and take the handkerchief and shake it, saying, it is gone, then shew them the money in the basin of Water.

How to seem to blow a six-pence out of another Mans hand.

TAke a six-pence, blow on it, and clap it presently into one of your spectators hands, bidding them to hold it

the other hand: Then ask of him if he be sure to have it, then to be certain, he will open his hand and look. Then say to him, Nay but if you let my breath go off. I cannot do it. Then take it out of his hand again, and blow on it, and staring him in the face, clap a piece of horn in his hand, and retain the six-pence, shutting his hand your self. Bid him hold his hand down, and slip the teaster between one of his cuffs. Then take the stone that you shew feats with, and hold it unto his hand, saying, *By vertue hereof, I will and command the Money to vanish. you hold in your hand. Vade, now see:* when they have looked, then they will think that it is changed by the vertue of your stone. Then take the horn again and seem to cast it from you, retaining it, and say, *Vade,* and anon say you have your money again: He then will begin to marvel, and say, I have not: say then to him again, you have and I am sure you have, and it will: Is't not in your hand? If it be not there, turn down the left hand one of your sleeves, for it is in one I am sure, where he hath it, he will not a little wonder.

at, how the Jew to cast a piece of Money away and to find it in another man's mouth, pocket, or purse.

a Table. THE Jugler calls for some one piece of Coin, as a teaster, you, having a shilling of any one in the company, he willet him mark it with what mark he will, then he taketh it, and lend you setteth it away, and cometh to his Confedrate (who of the hand furnished beforehand with the like piece of Coin, marked of so doing with the very same mark) and bids him deliver the counter sewe it out of his pocket, purse, or if he say the Word mouth, here, which this is concluded of before-hand. Now this confederate that there, to make the matter seem more strange, will turn on the table and fetter, asking how he should come by it, till having the table around the mark, he will confess it to be none of his, then the sixpence at his skill, how he should send it thither: and all the take up that be taken with a real admiration of his extraordinary saying, it cunning.

of Water. Now by the sound of a Counter phillipped to tell what side is: p-
Mans hand. permoss, whether crosse or pile.

presently into THE Jugler draws a Counter out of his pocket, & saith to the company, See here is a Counter, take it who please,

please, and let him phillip it up, and I will by cunning tell you whether cross or pile be uppermost by the very sound, for you shall *hoodwink* me. Now there are three or four, or more confederates in the place, who seeming strangers as well as the rest, will be very importunate to have the philliping it, and before one of these shall have it, who by some sign of the fingers or countenance (*fore known to the Juggler*) do give him information after he is demanded. Of the same nature is that trick formerly mentioned in the *Book*, and called, The decollation of *John Baptist*.

To make one dance naked is a trick of the same nature for the party afore-said is agreed to do it, and also in the manner and circumstances: So that the Jugler to blind the people, pronounceth sundry Words to such a person, he then begins to rave like a mad Man, and puts his cloaths off with a kind of violent carelesness, though, God *knows*, the party *knows* as well what he doth, as your self that reads it.

After the same manner shall you *know what* money another hath in his purse, and casting money into a pond, and finding it under a stone or threshold in another place.

Also to make a piece of money to leap out of a cup and run to another by means of a small hair fastned to the money, which hair the Confederate guideth: with a multitude of such like strange feats, which may seem impossible to the judgment of the common people to be effected without assistance of the Devil, or some familiar, which I nominate is neither needful, nor will my occasions permit so much leisure as to do it.

Bread to Increase a quarter, and keep 30 days longer than common Bread.

Boyl Pomkins in fair Water till it grow thick, and with that Water make your Bread, and it will be very good. *probatum*

Another.

Take your bran and boyl it in a Kettle of Water, then strain it, and make your bread with that white Water, and it will be a quarter more, and more substantial than Ordinary.

with variety of Inventions.

59

To Grease any Creaking in Wood.

Rub it with Soap and it is done.

To kill Ants.

Shit upon their Nest *probat.*

To catch Moles.

Put Onyons, Beets, or Oyl, into their Holes, and they'll run out presently.



Experiments in Arithmetick.

I. *A number of Men being delivered to an Officer to make there- of a Square Battail, and suddenly to tell how many ranks he shall have, and how many Men in each rank.*

Suppose the number of Men delivered to be 144 there- fore extract the square Root of 144, which is 12, and so many Men shall you have in flank, and as many in file.

Note that if the number had not been a square number, there would have been some odd Men remain- ing.

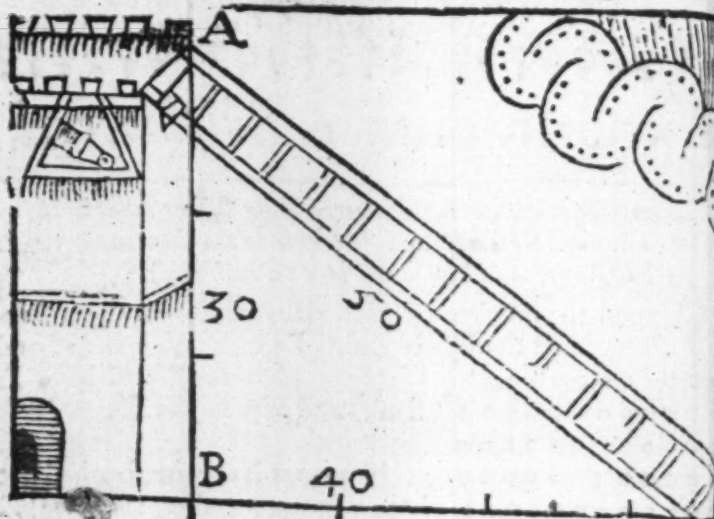
The Wall of a Fort or Castle being thirty foot high, and the breadth of the Trench about the Wall forty foot broad, I de- mand the length of a scaling-Ladder that will reach from the edge of the Trench to the top of the Wall.

This experiment is grounded upon the 47 Proposition of the first of Euclid, who saith in all right-angled triangles,

triangles, the square of that side which lieth against the right angle, is equal to the *two* squares of both the other sides.

From whence we may gather, that if the height of the Wall be squared, and the breadth of the Trench *likewise* squared, and those *two* squared numbers added together, and from them extract the square Root, that Root so extracted shall be the length of the Scaling-ladder required.

As for Example, in the Figure following.



Let AB represent the Fort, being 30 foot high, and BC the breadth of the Trench, 40 foot, then square 30, *fecit* 900, likewise square 40, *fecit* 1600: which added make 2500, the Root of which number is 50, the length of the Hypothenuſal or Scaling ladder required.

3. Admit the Semidiameter of the Earth to be 3346 miles, and that there is a Mountain one mile in height; I demand how far ſuch a Mountain may be ſeen at Sea or on Land.

AND the Semidiameter of the Earth and the Mountain together, *fecit* 3437, whose square is 11812969. From which ſubſtract the ſquare of the ſemidiameter of the Earth, *viz.* 11806096, there remains 6873, whose Root is 82 and three fourth; wherefore you may conclude, that the Mountain may be ſeen almoſt 82 miles.

4. The

The General delivered to his Master Gunner 5 Pieces of Ordnance, together with 168 pound of powder, the biggest of which Pieces spent at a shot 6 pound, the second 4 pound, and the third 2 pound, who commanded him to employ them against the battery of a Sconce, demanding of the Gunner how many shots each piece would make, being discharged one as often as another, and also how much powder each Piece would spend.

ET the quantity of each piece be set down in order, one under another, and added into one entire sum, as 6.4.2. fecit 12 behind which towards the right hand set down the sum of the powder delivered, viz. 168, which if you divide by 12, the quotient will be 14, which certainly telleth that they will make 14 shots a piece against the Sconce.

Now to know how much powder each piece will spend: multiply 14 by 6, fecit, 84, for so much will the first piece spend; again multiply 14 by 4, fecit 56, so much will the second spend; and lastly multiply 14 by 2, fecit, 28. so much will the last piece spend: which being added into one entire sum, the total will be 168 pound, which is equal to the powder by the General at first delivered.

A General having drawn the platform of a Fort, demanded of 50 Pioneers what time they required to finish it in? who replied 6 Weeks, or 36 Days (which is all one) but the expedition was such that it must be finished in 8 days; now would I know what number there must be employed.

THE resolution of this question to some may seem difficult, but to others very plain and easie, for if you multiply 50 (which is the number of Pioneers) by 36 the number of days which they require) and divide that product by 8, which is the time that the Fort must be finished in) the quotient of that division will be 225, and so many must be employed to finish it in eight days.

L

Pleasant



Pleasant Questions in ARITHMETICK

Question 1. *To tell the number that another Man shall think
be it never so great.*

LET the party that thinketh double the number which he thought; which done, bid him multiply the sum of them both by 5, and give you the product (which they will never refuse to do, it being so far above the number thought, from the which if you abate the last figure of the product (which will always be a Cipher or 5) the number thought will remain.

Example.

Let the number thought be 53, which doubled maketh 106, and multiplied by 5 makes, 530, then if you take away the Cipher which is in the last place, there will remain 53, the number thought.

Quest. 2. *Of the accusation of a Thief.*

A Thief breaking into an Orchard, stole from thence certain number of Pears, and at his coming forth he met with 3 men one after another, who threatned to accuse him of theft; and for to appease them he gave unto the first man half the Pears that he stole, who returned him back 12 of them. Then he gave unto the second half of them he had remaining, who returned him back 7. And unto the third man he gave half the residue, who returned him back 4, and in the end he had still remaining 20 Pears. Now do I demand how many Pears he stole in all? To answer this question you must work backward; for if you take 4 from 20, there will remain 16, which being doubled make 32. from which abate 7, and there will remain 25. which being doubled makes 50. from which subtract 12, and there will remain 38. which

again doubled make 76, the true number of Pears that he gathered.

Quest 3. Of three Sisters.

A Certain man having three Daughters, to the Eldest he gave 22 Apples: to the second he gave 16 Apples: and to the third he gave 10 Apples; and sent them to the Market to sell them, and gave them command to sell one as many for a penny as the other (namely 7 a penny) and every one to bring him home so much money as the other, and neither change either apples or moneys one with another; How could that be?

This to some may seem impossible; but to the Arithmeticians very easie. For whereas the eldest had 3 peniworths and one apple over, the second two peniworths and two apples over, and the youngest had one peniworth and three apples over: So that the youngest had so many single apples, and one peniworth, as the eldest had peniworths and one apple over, and consequently the second proportional to them both.

They made their Markets thus: a Steward coming to buy fruit for his Lady, bought all the Apples they had at 7 a penny, leaving the odd ones behind, then had the eldest Sister three-pence and one Apple, the middle Sister two pence and two Apples, and the youngest one penny and three apples. The Steward bringing the fruit to his Lady, she liked it so well, that she sent him for the rest; who replied that there were but few remaining, she notwithstanding sent him for them, and bid him bring them at any rate. The Steward coming to the Market again, could not buy the odd apples under a penny a piece (who to content his Lady was fain to give it) then had the youngest Sister three penniworth, the middle Sister two penyworths, and the eldest one penyworth, and so had they all four pence a piece, and yet sold as many for a penny one with another, and neither changed apples nor moneys one with another, as they were commanded.

Quest. 4. Of one that bought and sold both at a rate, and yet in the end proved a loser.

A Man bought 100 Eggs at three a penny, having 120 to the hundred, also he bought a hundred more at two a penny, having likewise 120 to his hundred, these Eggs being mingled, he sold them away for 5 two pence, and 120 to the hundred as he bought them, the question is whether he gained or lost in that bargain.

If you work by the Rule of Three Direct, you shall find that his 120 Eggs at 3 for a penny came to three shillings four pence, & his 120 at 2 for a penny came to 5 shillings, which being added make 8 shillings, 4 pence, Then again to see what they come to at 5 for 2 pence; work likewise by the rule of Three Direct, and you shall find that 240 at 5 for 2 pence, come but to 8 shillings, whereby the seller loseth 4 pence of the money they cost him.



Experiments in Geometry.

1. How to take the Altitude of a Building, or other approachable height by a line and plummet, the Sun shining.

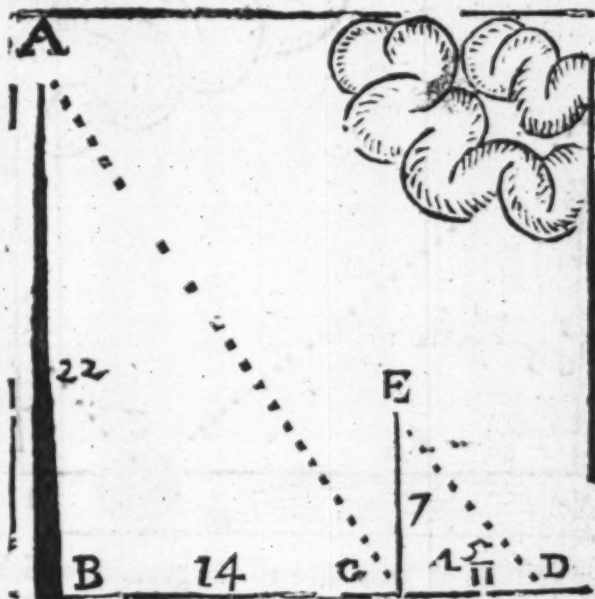
LET the Building whose Altitude you desire to know, be A B representing a May-pole, casting his shadow in a right line on the ground to C, at C let fall a line and plummet (whose length before you know in feet or inches) observing where the end of that shadow lights; which suppose at D, then measure the length of the shadow of the string, and consequently the shadow of the building, both which being exactly taken, work thus by the Rule of Proportion?

If C D, the shadow of the line and plummet 4 foot, and $\frac{3}{4}$, give E C 7 foot in altitude;

What

What altitude doth 14 feet give, which is the length of the shadow of the May-pole?

Multiply and divide according to that Rule, and you shall find in your quotient 22 foot, which is the true altitude of the building required.



2. How to take the Altitude by a Bowl of Water.

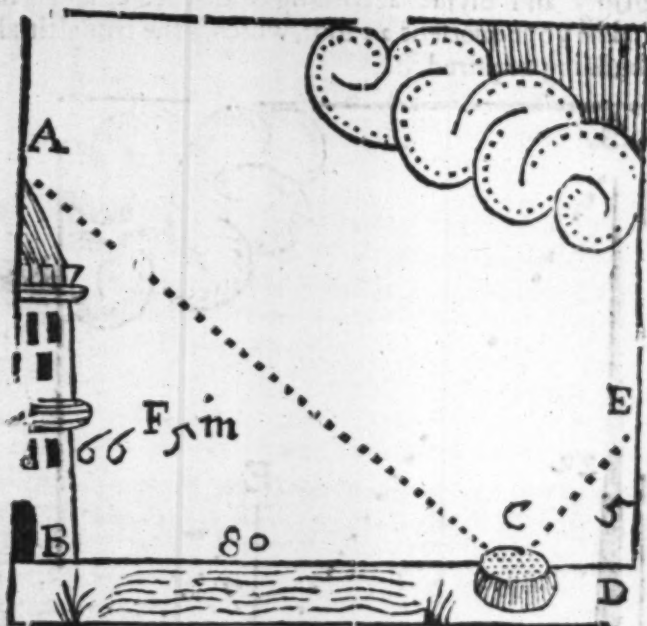
Place on the ground a Bowl of Water, which done, erect your body straight up, and go back (in a right line) from the building, till you espy in the Center or middle of the Water, the top of the Altitude; which done, observe the place of your standing, and measure the height of your eye from the ground, together with the distance from your standing to the Water, and the distance of the Water to the Base or foot of the Altitude; which being all exactly taken, will help you to the Altitude required, by the rule proportion.

Example.

Let the Altitude required be A B, the Bowl of Water placed on the ground at C, then go backwards from C your body erected as straight as may be to tie your eye at L 3 E,

What

E, spy the top of the Altitude A B in the Water, which found, observe the place of your standing at D, and mea-

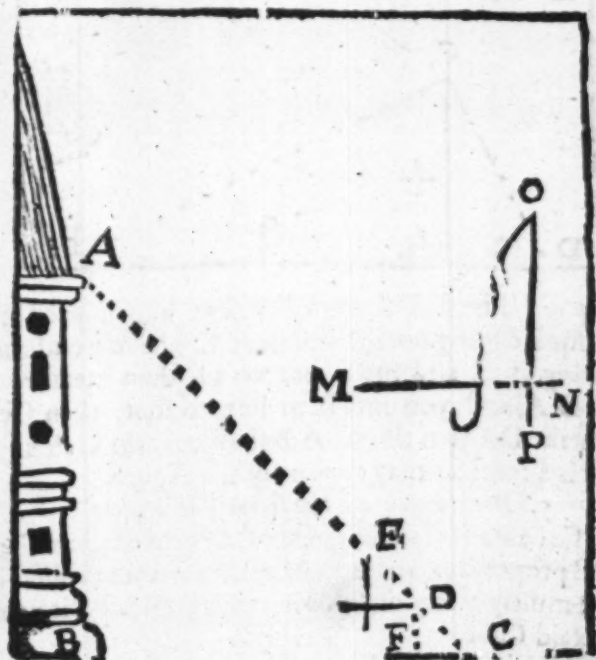


sure the altitude of your Eye to the ground, which is 5 foot, and likewise the distance from D to C, which is 80 foot, then measure the distance from C to B, which is 66 foot, these 3 distances Work by the Rule of Proportion. Thus, *As the distance C D is to the Altitude E D, So is the distance C B to the Altitude A B: which is 6 foot and 8 inches*
 3. How to find the Altitude of a Building by two sticks of one length joyn'd in a right angle, without Arithmetick.

CAuse two sticks to be joyned in a right angle, as is in the figure M N, & O P, having at O a hole made where in to hang a thread and plummet.

The two sticks being thus prepared, come to the building whose altitude you require (which building let be B.) then applying the end A of your cross staffe to your eye, hold it up or down till the thread and plummet hang just upon the line C D, then go back or forward (as occasion is given) till your Eye at D looking over E espy the

top of the building at A; which found, mark well the place of your standing, which is at F, and measure the distance from your eye to the ground, which is D F, and set that same distance off from F to C, then measure the distance from C to B, for that is the true height of the building A B, as may appear by the Figure, and likewise by the Theorem on which it is grounded.

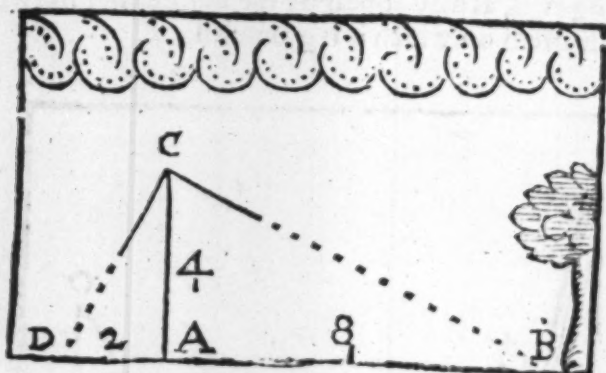


4. How to find a distance by the two Sticks joyned square.

This Experiment is grounded upon the 4 Prop. of the 6 of Euclid.

Let the distance which you desire to know, be A B. set up staves at A. of 4 foot long, (or more or less at your pleasure,) at A. C. at the end of the staff C. place a thread C D. then hanging the angle of the square O. on the top of the staff at C. lift it up or down, till you see the farthest part of your Longitude, the square so remaining, and the

staff not removed, draw the string that is fastned at C close by the side of the square, till it touch the ground at D. then measure how many times the distance D A, is contained in the staff, for so many times is the staff contained in the Longitude.



Example. The staff supposed 4 foot high placed at A. and the square being hung thereon, at C. the one end thereof pointing at B. and the other to D. then measure the distance D A, and you find it to be two foot, then say, if C A contain D A two times, A B shall contain C A as many, that is 8 foot, as may appear by the Figure.

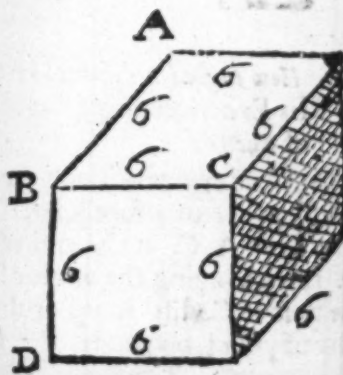
5. *How to measure the solidity of a Cube.*

THE Cube is a body composed of 6 square superficies of equal proportion, and is measured in manner following.

If you multiply any one side in it self cubically, it produceth the said Cube.

Example.

Let the Cube A B C D be given to be measured, the sides whereof are six Inches in length, the square whereof is 36, which again multiplied by the Root produceth 216, which is the content of a Cube in inches whose sides are six inches in length.



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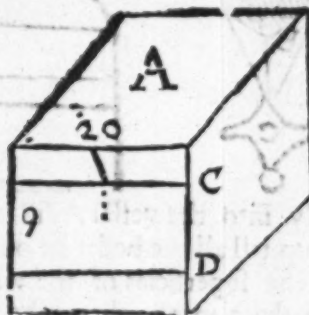


6. How to measure the solid content of any body how irregular so-
ever it be, the form or fashion not regarded.

TO perform this you must prepare an hollow Cube. into
which put your irregular body, which being plac-
d therein, you shall pour in so much Water till it no more than
cover the body in the Cube, then make a mark in the in-
side of the Cube, where the superficies of the Water touch-
eth. This done, take out the irregular body, and mark
again directly under the former, where the brim of the Wa-
ter now toucheth, for the distance of these 2 marks multi-
plied by the square of the Cubes side produceth the car-
titude of that irregular body.

Example.

Suppose A. to be the Cubical hollow vessel, whose in-
ward side suppose to be twenty inches: B the irregular bo-
dy whose Crassitude I desire. First, therefore I put B, into
the hollow Cube A. & pouring in Water till it be thoroughly
covered, admit the brim of the Water reach unto C, then
taking out that ir-
regular body a-
gain, admit the
superfices of the
Water fall to D.
then measure the
distance between
C. and D. which
suppose is 9 in-
ches, which mul-



plied in 400, the square of the Cubes side produceth
3600. and so many Cubical inches are contained in the
irregular body B.

7. How the Weight of any part or portion of a solid body may be
known, without separation thereof from the other part
of the body.

HAVING a Cube prepared as before declared, first, put
the solid body thereinto, which done fill the Cube

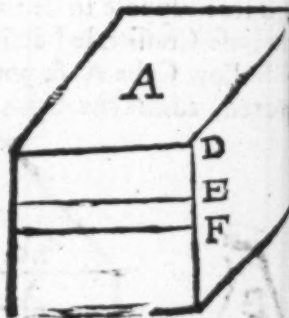
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top full of Water, then softly lift that body out of the Water till such time as there remain no more in the Water than that proportion whose weight you desire to know, at that Instant make a mark on one side of the Vessel where the superficies of the Water, then toucheth, then take out the body all together, this done, measure the distance from the former mark to the superficies of the water as it is now after the body is taken quite out. Likewise measure the distance of the Waters superficies from the top of the Cube, which done, augment the weight of the whole body by the lesser distance, and divide by the greater your quotient will shew the true weight of the fragment required.

Example.

Admit B C. to be in all 100 pound weight being either brass, iron, silver, lead, stone, or other mettall, my desire is to know the weight of the portion C. first therefore put-



ting the whole body into the vessel A. fill it full of water then lifting it softly up till all the body be out of the water excepting C. I find the superficies of the water to be fallen to E. where I make a mark, then take out the whole body, admit the Water is fallen to F. and that by measuring I find E F. to be 8 inches, and D F. 20 inches, 8 multiplied in 100, (the whole pillars weight) yieldeth 800. which divided by 20 (the greater distance) bringeth in the quotient 40, so many pound weight I conclude the portion C to weigh.

8. *How to break a Staff upon two Glasses of Water.*

Place the Glasses being full of Water upon two joyned Stools, or such like equidistant from the ground, and distant one from another, the length of the Staffe; The place

place the ends of the staff upon the edges of the two
 glasses, so that they be sharp; this done, with all the force
 you can, with another Staff strike the Staff which lies on
 the Glasses in the midst, and it will break, without breaking
 the Glasses or spilling the Water.

9. *How to know the hour of the Day by the hand and fingers.*

Take a straw or the like, of the length of the Index, or
 the second finger, hold this straw very right between
 the thumb and the right finger, then stretch forth the
 hand, and turn your back and the palm of your hand to-
 wards the Sun, so that the shadow of the muscle which is
 under the thumb touch the line of life, which is between
 the middle of the two other great lines, which is seen in
 the palm of the hand; this done, the end of the shadow
 will shew what of the clock it is, for at the end of the great
 finger it is 7 in the morning, or 5 in the evening, at the end
 of the ring-finger, it is 8 in the morning, or 4 in the even-
 ing, at the end of the little finger, or first joynt, it is 9 in
 the morning, or 3 in the afternoon, 10 and 2, at the second
 joynt, 11 and 1, at the third joynt, and mid-day in the line
 following, which comes from the end of the Index; Note
 that this Experiment must be performed by the left hand.

10. *How to make two Images, one of which shall light a Can-
 dle, and the other blow it out.*

Upon the side of a Wall make the figure of two Images,
 in the mouth of each put a pipe or quill, so artificial-
 ly that it be not perceived, in one of which place salt-peter
 very fine, and dry and pulverised, and at the end set a
 little match of paper. in the other quill Sulphur beaten
 small. Then holding a lighted Candle in your hand, say
 to one of those Images by way of command, blow out the
 candle, then lighting the paper with the Candle, the Salt-
 peter will blow out the Candle immediately, and going to
 the other Image, (before the snuff of the Candle be out,) touch
 the Sulphur with it, and say, Light the Candle, and
 it will immediately be lighted.

11. *How to make a Clock with on Wheel.*

Make the body of an ordinary Dial, and divide the hour in the circle in 12 parts, make a great wheel in height above the Axle-tree, to the which you shall place the Cord of your counterpoise, so that it may descend, then in 12 hours of time your Index or Needle make one revolution, which may be known by a Watch, then put a balance, which may stop the course of the Wheel, and give it a regular motion, and you shall see an effect as just from this, as from a Clock with many Wheels.

12. *To make a Water that taketh off the Colouring of the hands of any Artificer, as Dyers, &c.*

Take the Juice of a Lemmon, with a little bay Salt, and wash your hands with it, & let them dry of themselves, wash them again, and you shall find all the spots and stains gone: it is also very good against the Scurf or Scabs.

13. *To prevent Fleas from Dogs.*

Take the Green outward shell of Walnuts and stamp them, and anoint the Dog with it, where the fleas vex him, and especially in the Ears, and the Fleas shall not touch him.

14. *To heal Cleft, or Kibed heels.*

Take Dragaul, and Galbanum, as much of one as the other and make thereof a powder, then take new Water oyl of Violets, & a little Goat suet or Ox-Tallow, & melt it on the fire, then put in the said Powders, and make of these an Oyntment, wherewith anoint your heels, and they will be suddenly whole.

15. *To make an Old Writing appear fair.*

Take Galls and boyl them in Wine, and wash the Writing therewith.

16. *To take the Impression of the Seal of a Letter.*

Melt a little brimstone, casting in some white Lead, put this mixture on the Seal, strengthening it with a small piece of paper, a little bigger then the impression, being cold take it off, and you shall find the print of the Seal thereon.

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